



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/863,217	05/22/2001	Carl S. Marshall	10559-479001/ P11158	8946
20985	7590	01/15/2004	EXAMINER	
FISH & RICHARDSON, PC 12390 EL CAMINO REAL SAN DIEGO, CA 92130-2081			WALLACE, SCOTT A	
			ART UNIT	PAPER NUMBER
			2671	//
DATE MAILED: 01/15/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/863,217

Applicant(s)

MARSHALL ET AL.

Examiner

Scott Wallace

Art Unit

2671

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7,9-17,19-27,29 and 30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7,9-17,19-27,29 and 30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 10.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

***Response to Arguments***

1. Applicant's arguments filed 10/28/03 have been fully considered but they are not persuasive. The applicant argues that neither Kobe-shi nor Junkins teach "rendering a shadow having the adjusted resolution of the 3D model on the surface using the projected elements and rendering the 3D model at a resolution that is higher than the adjusted resolution". Junkins in column 1 lines 10-25 teaches being able to change the level of detail or resolution of the model depending on the amount of realism the user wants. Therefore the model could be rendered at a resolution higher than before.
2. As per applicant's argument that Kobe-shi doesn't render shadows that have a reduced level of resolution, it is the combination as Kobe-shi and Junkins that teach this. The applicant states this on page 10, paragraph 3, of the amendment. "Therefore, if Junkins were combined with Kobe-shi, in the manner suggested in the Office Action, the resulting hypothetical combination, at best, would render both an original mesh and a shadow at a reduced resolution".

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
2. Claims 1-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobe-shi, European Patent Application, EP 0948978A2 in view of Junkins et al., U.S. Patent No. 6,198,486.
3. As per claims 1, 11 and 21, Kobe-shi discloses a method of generating a shadow in a virtual three-dimensional (3D) space (abstract), comprising: projecting elements of the 3D model onto a surface in the virtual 3D space (abstract). However, Kobe-shi does not disclose adjusting a resolution of a 3D model. This is disclosed in Junkins et al in column 1 lines 10-45. It would have been obvious to one of

ordinary skill in the art at the time the invention was made to adjust the resolution of the model in Kobe-shi because this would make it easier to remove excessive details if less detailed models were required. Also Kobe-shi does not disclose rendering a shadow having the adjusted resolution of the 3D model on the surface using the projected elements. This would have been obvious to one of ordinary skill in the art at the time the invention was made because adjusting the resolution of the 3D model would correspondingly affect the resolution of the image projected from it. Also Kobe-shi does not disclose rendering the 3D model at a resolution that is higher than the adjusted resolution. Junkins in column 1 lines 10-25 teaches being able to change the level of detail or resolution of the model depending on the amount of realism the user wants. Therefore the model could be rendered at a resolution higher than before. It would have been obvious to one of ordinary skill in the art to render the model at different resolutions because depending on the amount of realism needed, the resolution would be adjusted accordingly.

3.

4. As per claim 2, 12 and 22, Kobe-shi discloses wherein the elements of the 3D model are projected based on a location of a virtual light source in the virtual 3D space (abstract).

5. As per claims 3, 13 and 23, the rejection is based on the same statements of claim 1 above. Since this is a multi-resolution model then it would be possible to repeat claim 1 with a different resolution.

6. As per claims 4, 14 and 24, Junkins et al discloses wherein adjusting comprises reducing the resolution of the 3D model (column 1 lines 10-45).

7. As per claims 5, 15 and 25, Junkins et al discloses wherein adjusting comprises removing elements of the 3D model (column 1 lines 10-45).

8. As per claims 6, 16 and 26, Junkins et al discloses wherein the 3D model comprises a multi-resolution model (column 1 lines 10-45).

9. As per claims 7, 17 and 27, Junkins et al discloses providing a user interface for use in adjusting the resolution of the 3D model (column 1 lines 10-15).

10. As per claims 8, 18 and 28, Junkins et al discloses rendering the 3D model at its original resolution (column 1 lines 10-45).
11. As per claims 9, 19 and 29, Junkins et al discloses wherein the elements comprise vertices of the 3D model (column 1 lines 10-45).
12. As per claims 10, 20 and 30, Junkins et al discloses wherein the elements comprise polygons of the 3D model (column 1 lines 10-45).

***Conclusion***

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Scott Wallace** whose telephone number is **703-605-5163**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Mark Zimmerman**, can be reached at 703-305-9798.

**Art Unit: 2671**

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

**or faxed to:**

**(703) 872-9314 (for Technology Center 2600 only)**

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA,  
Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be  
directed to the Technology Center 2600 Customer Service Office whose telephone number is  
(703) 306-0377.



MARK ZIMMERMAN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600